



Alliant Ammunition and Energetics Co.  
Radford Army Ammunition Plant  
Route 114, P.O. Box 1  
Radford, VA. 24141-011

## Material Safety Data Sheet

### Section 1. Product Information

<b>Product Name:</b>	Propellant M30
<b>MSDS Number:</b>	
<b>Product ID#:</b>	
<b>Preparation Date:</b>	Revised November 1, 2007
<b>Business Phone/Hours:</b>	540-639-8143
<b>Emergency Telephone #:</b>	540-639-7323
<b>24 Hr. Spill (Chemtrec):</b>	1-800-424-9300

### Section 2. Composition/Information On Ingredients

<u>Chemical Name</u>	<u>Common Name</u>	<u>CAS Number</u>	<u>Weight. % Range</u>
Nitrocellulose	NC	9004-70-0	26-30%
Nitroglycerin	NG	55-63-0	20-24%
Nitroguanidine	NQ	556-88-7	46-48%
Ethyl Centralite	EC	85-98-3	1-3%
Graphite		7440-44-0	1-3%
Cryolite		15096-52-3	0.3%

### Section 3. Hazard Identification

#### Emergency Overview:

#### **DANGER!**

Accidental explosion is likely to cause severe injury or death.  
Electrostatic charges and generated impact while handling this product may cause ignition.  
May cause headache, insomnia, fatigue, nausea, vomiting if absorb through skin, inhaled or ingested.

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<b>Eye:</b>	May cause eye irritation on contact
<b>Skin:</b>	Absorption may cause skin irritation and headache.
<b>Ingestion:</b>	Unlikely to occur. May cause irritation of the gastrointestinal tract with vomiting. If vomiting results in aspiration, chemical pneumonia could follow. Absorption through gastrointestinal tract may produce symptoms of central nervous system depression ranging from light headedness to unconsciousness. Ingestion may lead to symptoms associated with nitroglycerin exposure (severe headache and possible cardiac problems).
<b>Inhalation:</b>	May cause mild to severe headache

<b>Cancer Information:</b>	<b>*NTP:</b> No	<b>OSHA:</b> No	<b>IARC:</b> No
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#### Section 4. First Aid Measures

<b>Eyes:</b>	Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Render unusable and discard contaminated shoes and leather articles.
<b>Ingestion:</b>	Not likely to occur. Do Not induce vomiting, seek medical attention
<b>Inhalation:</b>	Remove to fresh air. If breathing is difficult, give oxygen. Get immediate medical attention.

#### Section 5. Fire Fighting Measures

<b>Flammable Properties:</b>	Flammable EVACUATE AREA IMMEDIATELY. DO NOT fight fire.
<b>Hazardous Decomposition Products:</b>	None anticipated under normal or recommended handling and storage conditions.
<b>Extinguishing Media:</b>	Deluge with large quantities of water as quickly as possible by automatic sprinklers or fire hose from a protected location.
<b>Protective Equipment:</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire clothing (includes fire fighting helmet, coat, pants, boots, and gloves).

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**Unusual Fire and Explosion Hazards:** Flammable hazard, may detonate under the right conditions.

## Section 6. Accidental Release Measures

**Spills and Leaks:** Clean up spills immediately using soft natural bristle brush and conductive rubber or conductive plastic shovel. Use caution; material is sensitive to initiation from sources such as heat, flame, shock, friction or sparks. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

**Waste Disposal:** Disposal (if explosive) should be carried out under the direct supervision of a qualified person. For industrial disposal, federal hazardous waste regulation allows open burning of explosive wastes in permitted facilities. Check with your local government authorities before disposal.

## Section 7. Handling Information

Electrically ground all equipment.  
DO NOT PRESSURIZE OR EXPOSE CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION  
Follow appropriate D.O.D., N.F.P.A. and B.A.T.F. explosive safety measures. Local ordinances may apply.  
For handling and storage requirement see 29 CFR 1910.109.  
Store in cool, dry place: approximately 68°F (20°C)  
Store only in Department of Transportation approved containers.  
Check old product for deterioration regularly.  
Keep container closed when not in use.

## Section 8. Exposure Control Measures / Personal Protection

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt. %</u>	<u>Applicable Exposure Limits</u>		
			<u>OSHA</u>	<u>ACGIH</u>	<u>Other</u>
Nitrocellulose	9004-70-0	26-30%	Not Est	Not Est	
Nitroglycerin	55-63-0	20-24%	0.2 ppm (Ceiling)	0.05 ppm	
Nitroguanidine	556-88-7	46-48%	Not Est	Not Est	
Ethyl Centralite	85-98-3	1-3%	Not Est	Not Est	
Graphite	7440-44-0	1-1%	15 mg/m3 Total Dust	2 mg/m3	
Cryolite	15096-52-3	0.3%	Not Est	2.5 mg/m3	

\* Not Est. Not Established

**Engineering Controls:** Prevent build-up of static electric charges. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposures limits. Discharge from the

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	ventilation system should comply with applicable air pollution control regulations.
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<b>Respiratory Protection:</b>	Appropriate respiratory protection is required to reduce airborne contaminants, which may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturer's recommendations.
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<b>Hand Protection:</b>	Impervious gloves
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<b>Eye Protection:</b>	Safety glasses
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<b>Hygiene Controls:</b>	Avoid contact with eyes, skin and clothing. Avoid breathing dust, vapor, or mist. Handle in areas with adequate ventilation. Wash thoroughly after handling, and before eating, drinking, or smoking Avoid contamination of food, beverages, or smoking materials. Remove contaminated clothing promptly and clean thoroughly before reuse.
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## Section 9. Physical And Chemical Properties

<b>Boiling Point:</b>	NA	<b>Solubility:</b>	NA
<b>Melting Point:</b>	55.4 F	<b>Specific Gravity:</b>	(H <sub>2</sub> O=1) 1.6938
<b>Vapor Pressure:</b>	Negligible	<b>pH:</b>	NA
<b>Vapor Density:</b>	NA	<b>Odor:</b>	Odorless
<b>Flash Point:</b>	Explodes	<b>Appearance:</b>	Dark gray if coated with Graphite
<b>Ignition Temp.:</b>	NA		
<b>UEL:</b>	NA		
<b>LEL:</b>	NA		

## Section 10. Stability and Reactivity

<b>Stability:</b>	Stable under recommended handling and storage conditions. Material is sensitive to friction, shock, impact, and electrostatic discharge.
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<b>Incompatibilities:</b>	
<b>Conditions to Avoid:</b>	Avoid storing product near incompatible materials. Do not store near flammable materials. Do not keep deteriorated or salvaged product. Keep away from heat, flame sparks and other ignition sources. Do not store in direct sunlight or expose to UV radiation

<b>Hazardous Decomposition Products:</b>	None anticipated under normal or recommended handling and storage conditions.
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## Section 11. Toxicological Information

Nitroglycerin	<p><b>Nitroglycerin: WARNING! Inhalation may cause severe headache. Ingestion may cause severe headache and blood pressure lowering.</b> Absorption through skin may cause severe headache. Repeated skin contact may cause allergic skin reaction (skin sensitization).</p> <p><u>Signs and Symptoms of Overexposure in the Workplace:</u></p> <p>Skin - Severe headache, nausea, vomiting, fatigue Inhalation - Severe headache, nausea, vomiting, fatigue Ingestion - Severe headache, nausea, vomiting, fatigue</p> <p><u>Medical conditions generally recognized as being aggravated by exposure:</u></p> <p>Severe untreated anemia and glaucoma may be aggravated by extreme overexposure to nitroglycerin in the workplace. Aggravation of these conditions has never been reported as a consequence of workplace exposure but has been reported following protracted medicinal overdosage of nitroglycerin. Alcohol has been reported to intensify any adverse reaction to nitroglycerin.</p> <p>Not listed as a carcinogen by National Toxicity Program (NTP); not regulated as a carcinogen by Occupational Safety and Health Administration (OSHA); not evaluated by International Agency for Research on Cancer (IRAC). Rats dosed for a lifetime showed a <u>decrease</u> in the number of mammary and pituitary tumors that usually occur.</p> <p><u>Reported Human Effects:</u> The effects reported above are only ones that have been reported following workplace exposure. The following additional effects have been reported following medicinal usage or overusage: faintness, skin flush, palpitation, rapid heart beat dizziness, abdominal pain, retrosternal discomfort, muscle twitches, Heinz bodies (black spheres in red blood cells), methemoglobinemia, depression, confusion, skin irritation, and allergic skin reaction (sensitization).</p>

## Section 12. Ecological Data

NA

## Section 13. Disposal Considerations

Disposal of material should be in accordance with Federal, State and local regulations.

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## Section 14. Transportation Information

<b>U.S. DOT Proper Shipping Name:</b>		Powder, smokeless
<b>UN ID No.:</b>		0161
<b>Class &amp; Division:</b>		1.3C
<b>Packing Group.:</b>		II

## Section 15. Regulatory Information

<b>OSHA:</b>	
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<b>TSCA:</b>	<b>Section 12(b) Listed:</b>	<b>Unlisted:</b>	<b>Exempt:</b>
	None	None	None

<b>CERCLA:</b>	<b>Reportable Quantity:</b> A release of this propellant may be subject to reporting to the National Response Center under CERCLA (40 CFR Part 302, Table 302.4) for Nitroglycerine (RQ = 10 lbs).
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<b>SARA Title III:</b>			
<b>Section 302:</b>	<b>Chemical Name:</b> Not Applicable		
	<b>Threshold Planning Quantity:</b> Not Applicable		
	<b>Reportable Quantity:</b> Not Applicable		
<b>Section 311/312:</b>	<b>Hazard Class:</b> <input checked="" type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input checked="" type="checkbox"/> Fire <input checked="" type="checkbox"/> Reactive <input checked="" type="checkbox"/> Sudden Release of Pressure		
<b>Section 313:</b>	<b>Chemical Name:</b>	<b>CAS Number/Category Code:</b>	<b>Weight %:</b>
	Nitroglycerine	55-63-0	20-24%

<b>Other:</b>	Wastes associated with this propellant may be considered RCRA Hazardous Wastes (40 CFR Part 261) for the characteristic of reactivity.
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## Section 16. Information Sources

### Label Information:

### DANGER !

**KEEP AWAY FROM HEAT, SPARKS OR OPEN FLAME**

**DO NOT ATTEMPT TO FIGHT FIRE**

**MAY BE ABSORBED THROUGH SKIN**

**INHALATION MAY CAUSE HEADACHE**

Ingestion may cause nausea, vomiting and possible loss of consciousness.

**FIRST AID:** In case of contact, immediately flush skin with water. Remove contaminated clothing and shoes.

Call physician if irritation develops and persists.

**Read product-specific MSDS for more details**

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**Abbreviation Key:**

ACHIH:	American Conference of Governmental Industrial Hygienist
AICS:	Australian Inventory of Chemical Substances
AIHA WEEL:	American Industrial Hygienists Association - Workplace Environmental Exposure Level
ANSI:	American National Safety Institute
C:	Ceiling
CASRN:	Chemical Abstracts Service Registry Number
CERCLA:	Comprehensive Emergency Response, Compensation and Liability Act
DSL:	Domestic Substances List (Canadian)
EIECCS:	European Inventory of Existing Commercial Chemical Substances
HMSI:	Hazardous Materials Identification System
IARC:	International Agency for Research on Cancer
MITI:	Ministry of International Trade and Industry (Japanese)
N/A:	Not Applicable
NDSL:	Non-domestic Substances List (Canadian)
NFPA:	National Fire Prevention Association
NOR:	Not Otherwise Regulated
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit
RCRA:	Resource Conservation and Recovery Act
RQ:	Superfund Amendment Reauthorization Act
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value (ACGIH)
TPQ:	Threshold Planning Quantity
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted Average

**Disclaimer:**

Although the information contained in this material safety data sheet has been compiled from sources believed to be reliable, no warranty, guaranty or representation is made as to the accuracy or completeness of the information contained herein and no responsibility or liability is assumed regarding the suitability of this information for the user's intended purpose or the consequences of its use. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its obligations under any applicable federal, state, or local law or regulation.

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